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Variables Affecting Productivity in Special Education Researchers

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Abstract

This study presents the results of a survey of special education researchers on variables that might affect research and publication productivity. The subjects were divided into three groups: low producers, intermediate producers, and high producers. The data were analyzed using the Kruskall-Wallis one-way analysis of ranks and the Chi-square test. Statistically significant results were obtained for five variables: teaching load, participation in research during graduate training, sources of support for research, availability of graduate assistants, and attitude toward research. The results are discussed and suggestions offered on how Colleges of Education might increase the productivity of their faculties.

Variables Affecting Productivity in Special Education Researchers

There exists an underlying philosophy at most universities and colleges that research productivity should be a component of a professor's duties and responsibilities. While a wide range of expectations exist as to the quality and quantity of research and its relationship to overall productivity, a tradition of research does not exist in education as it does, for example, in medicine and other scientific areas in the university community (Ausubel, 1969). Clark and Guba (1976, 1977), in an extensive investigation of schools, colleges, and departments of education, found that approximately 81% of the colleges of education could be classified as either non or low producers of scholarly research and estimated that only two percent could be classified as significant research producing centers.

A number of hypotheses exist as to why education is a comparatively low producer of research. Many professors of education began their careers in the public schools where the expectation for research is virtually nonexistent. Many administrators in colleges of education are not producers of research themselves, and, therefore, do not set high expectations in this area for their faculty. Because colleges of education generally view their mission as teacher training, it is not surprising that the role of teaching out weighs the role of research. In the study by Clark and Guba (1977), a strong correlation was found between high research producing colleges of education and the existence of a central mission statement supporting research; i.e., colleges of education who state that their central mission is the production of

research tend to be identified as highly productive research centers. Michalak and Friedrich (1981) found a correlation of .33 between effective teaching and research and conclude that one cannot make the general assumption that research productivity directly enhances teaching. This might, in part at least, explain the apparent lack of enthusiasm for research seen in many colleges of education. However, these researchers still support the pursuit of scholarly research and publication as desirable. They would probably agree that research should be promoted, not as a means of improving teaching, but rather for the potential improvement in educational practice and knowledge that might result. In summary, the suggestion by Martin and Berry (1969) that the university of tomorrow could have two distinct types of faculty, the "teaching professor" and the "research professor," may have merit.

While researchers in special education have generally been viewed as more productive than those in other areas within education, they too appear to be, to some extent, deficient in research productivity even though research is considered to be important and needed in many areas within special education (Drew, Preator, & Buchanan, 1982). Drew et al. have also suggested that, in their opinion, the argument made by many educators that they do not have the time to write and do research is unfounded. The purpose of this study was to examine some of the variables, particularly institutional variables, that might influence special education research by education faculty in colleges of education.

Method

Subjects

The subjects for this study were selected by inspecting all issues

of eight journals devoted to the handicapped during the years 1977-1982. The journals used were: American Journal of Mental Deficiency, Behavioral Disorders, Exceptional Children, Journal of Abnormal Child Psychology, Journal of Learning Disabilities, Journal of Special Education, Learning Disabilities Quarterly, and Mental Retardation. While this selection of journals may not be ideal, they were selected using the following criteria: (a) a special education orientation, (b) to provide a mix of Council for Exceptional Children (CEC) and nonCEC publications, (c) publication of research, and (d) availability. A list of all persons publishing in these journals and the number of publications for each was compiled. From this list, two groups were formed. One group consisted of those individuals with one or two publications, and the second group consisted of those having six or more publications. This criterion was arrived at after inspection of the list compiled from the journals surveyed. The criterion chosen provided the best differentiation between relatively low and high producers while maintaining an adequate number of subjects for the survey. A sample of 100 subjects was then selected with 50 in each sample. For the six or more publications group, this consisted of virtually the entire group. For the one or two publications group, a random selection process was used.

Using the number of publications represented in the sample, the following distribution of the publications characterized the sample. The Northwest (WA, OR, MT, ID, WY) contributed two percent, the Southwest (CA, NV, UT, AZ, CO, NM) 12%, the North Central (ND, SD, NE, MN, IA) five percent, the South Central (KS, OK, TX, MO, AR) five percent, the

Northeast (IL, WI, IN, MI, OH, DE, MD, PA, NJ, NY) 48%, New England (VT, NH, RI, ME, CT, MA) three percent, and the Southeast (KY, LA, MS, AL, GA, FL, TN, SC, NC, WV, VA) 25%.

Measurement

A survey questionnaire was developed consisting of 25 items. Several of the items dealt with characteristics of the subjects, i.e., academic rank, sex, number of statistics courses taken, number of research design courses taken, participation in research during graduate training, postdoctoral training in research, number of publications in refereed journals in the past five years, motivation for engaging in research and publication, and attitude toward the importance of research.

The remaining items were variables that would be under the control of the subject's institution, in whole or part, which might impact on productivity. These included teaching load, relation of teaching assignments to areas of research interest, sources of support for research activities, release time, graduate assistants, office of grants, availability of assistance in proposal development, computer literature search capability, charges for computer searches, availability of articles and materials needed for research, payment of publication fees, payment of dissemination costs, support for travel to present research, support for manuscript preparation, and availability of technical assistance for individuals engaged in research.

Procedures

The survey questionnaire was mailed to the selected sample with a cover letter and a self-addressed postage paid return envelope. Using

the returned questionnaires, the subjects were grouped by number of subject-reported, research publications in refereed journals. Following an inspection of sorted returns, it was decided to arrange the data into three groups, i.e., low, intermediate, and high, in place of the original two group arrangement, i.e., low and high. Each group was assigned a range, and differentiation among the groups was accomplished by setting the lower range value for one group at twice the upper range value for the preceding group. This procedure resulted in the following groupings:

Low (1-5 publications) N = 20,

Intermediate (10-20 publications) N = 20,

High (40+ publications) N = 7.

This procedure resulted, of necessity, in the elimination of some returns which did not meet the criteria used to form three distinctly different groups in terms of quantity. A few returns were also randomly removed to equalize the size of the low and intermediate groups, and a few were removed if the subject indicated s/he was not employed in a college of education. This latter procedure was used to avoid comparing individuals in education with those in arts and sciences or other areas, since it was decided to limit the study to educators doing research in special education.

The characteristics of the subjects comprising the three groups used in the data analysis were as follows. The low group was 65% male and 35% female. This group's institutional status was 10% assistant professors, 20% associate professors, 55% full professors, and 15% other, e.g., director of a demonstration school. The intermediate group was

80% male and 20% female. This group's institutional status was 10% assistant professors, 35% associate professors, 50% full professors, and five percent other. The high group was 100% male. This group's institutional status was 14% assistant professors, 29% associate professors, and 57% full professors.

Results

Due to the small size of the sample and the nominal level of measurement used for most of the items, the data analysis was done using nonparametric statistics. For those items having a numeric value, i.e., number of statistics courses, number of research design courses, and teaching load, a Kruskal-Wallis one-way analysis of ranks was used. For those items using nominal measurement, the Chi-square test was used.

The analysis of three items using the Kruskal-Wallis resulted in two nonsignificant differences. These were the items pertaining to statistics courses and research design courses taken. The one significant item pertained to teaching load. Teaching load, for purposes of this study, was defined as the subject's total load in either quarter or semester hours and included actual course load and/or release time for administrative duties. Since most respondents reported semester hours, those responses reported in quarter hours were converted to semester hours. The median rank for each group from low to high was 32.75, 18.82, and 13.79. The corresponding mean teaching load in semester hours was 10 (N=20), 7.5 (N=20), and 6 (N=7). The X^2 corrected for ties was 15.287, P = < .0000. The analysis of the remaining 19 items, using the Chi-square test, resulted in four significant items (see Table 1) and 15 nonsignificant

items. The four significant items related to participation in research during graduate training, sources of funding for research, availability of graduate assistants, and attitude toward the importance of research.

Insert Table 1
About Here

Discussion

The results of this study suggest that there are several types of variables that affect faculty productivity. While there was no significant differences between the groups in terms of the number of courses taken in statistics and in research design, the means on these two items might be of interest. The mean number of courses were five and two respectively, for combined undergraduate and graduate courses, across the groups. One educational variable on which the groups did vary was participation in research as a part of their graduate programs. The percent who indicated that this was a part of their education, from low to high, was 57, 85, and 100 across the three groups. This supports Clark and Guba's (1977) finding that professional socialization is an important variable in producing educational researchers. This finding also supports comments made by several respondents that, in their view, the most important variable in producing productive educational researchers was a mentor-type relationship with a researcher.

There were no significant differences on most of the variables relating to institutional support for research. Two exceptions to this, however, were teaching load and provision of graduate assistants. The mean teaching load across the three groups, in semester hours from low

to high, was 10, 7.5, and 6. In fact, this was tied for the most significant difference found among the five variables that were significantly different and clearly suggests that the teaching load required of faculty members by an institution may be a critical factor in productivity. This finding does not support the opinion of Drew et al. (1982) that the argument by educators that they do not have time to do research was unfounded. The second variable relating to institutional support was the provision of graduate assistants. The percent of respondents indicating that they were provided with graduate assistants was, from low to high, 25, 70, and 57, across the groups. While no explanation can be offered for why the high group came out lower on this variable than the intermediate group, it is clear that both were more likely to be provided with graduate assistants than the low group. It should be noted that this variable also has implications for time available to educators for research. A fourth variable that related, in part, to institutional support was sources of funding for research. There did not appear to be any significant difference between the groups on the level of institutional funding as the percent of respondents' research receiving institutional funds was, from low to high, 28, 30, and 35, across the three groups.

The data on other sources of funding indicated that the low group was much more likely to support their research out of personal funds than were the other two groups. The percent of personal funding for research was, from low to high, 55, 27, and 17, across the three groups. The high and intermediate groups were much more likely than the low group

to have external funding for their research. The percent of external funding was, from low to high, 17, 43, and 48, across the three groups.

Finally, this study suggests that attitude toward the importance of research might also be an important variable. The percent of respondents viewing research to be very important was, from low to high, 40, 85, and 100, across the three groups. Contrary to expectations, promotion and/or tenure as reasons for engaging in research did not reach statistical significance. One can probably safely assume that all full professors would already be tenured and not concerned with promotion. It would seem reasonable that most associate professors would be concerned with promotion and most assistant professors would be concerned with both promotion and tenure. Any explanation for this anomally must, of necessity, be speculative. One possibility might be that most respondents were truely interested in research for other reasons and, therefore, did not check these responses because they considered them to be secondary to their primary motivation. On the other hand, it could be that the respondents did not wish to appear mercenary by checking a reason that would be primarily self-serving, i.e., tenure and promotion.

In conclusion, this study suggests that if an institution wants to promote research among its faculty, there are ways in which it can exert an influence. First, in seeking new faculty, particularly at the entry level, it should look for individuals who have been actively involved in research during their graduate education. Two possible indicators of this would be individuals who have been graduate research assistants and/or who have published during their graduate education. Also, the

attitude of potential new faculty toward research should be appraised. Relative to existing faculty, the institution should encourage and even provide incentives for productive and non or low productive faculty to work together, particularly junior faculty. As suggested by Clark and Guba's (1977) research, an institution can also probably influence the attitude toward research in its existing faculty by its own attitude toward research. This can be reflected in the weight given to research activity in decisions relating to raises, promotion, tenure, choice in teaching assignments, choice in class scheduling, committee assignments, release time, assignment of graduate assistants, and financial support for faculty research by the institution and its divisions.

Second, the institution should try to reduce teaching load and provide funds for graduate assistants if it wants to promote faculty productivity. While it may not be possible to do this across the board, these could certainly be used as incentives for faculty members who are productive or show potential for productivity. While the significantly higher external funding support for research held by the more productive faculty surveyed in this study is not a variable that an institution can directly influence, it can exert an indirect influence. Very possibly, the higher level of external funding found among the more productive respondents was, in part, made possible by the lighter teaching loads and greater availability of graduate assistants associated with these respondents. Both of these variables can be influenced by the policies and actions of an institution. Since there do appear to be important variables that can be utilized by institutions to influence faculty

productivity, it could be that the reasons for the finding by Clark and Guba (1977) that only two percent of colleges of education can be classified as highly productive is that most institutions are not seriously committed to faculty productivity, there is a lack of leadership capable of promoting productivity in faculty, or both.

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Table 1

5. Did you participate in research as a part of your graduate training (excluding your dissertation)?

	Yes	No
L	11 (57%)	9 (43%)
I	17 (85%)	3 (15%)
H	7 (100%)	0 (0%)

$X^2 = 7.554$, $P = < .0226$

10. Please indicate the proportion of your research activities supported by the following sources.

	Self	Institutional	External
L	55	28	17
I	27	30	43
H	17	35	48

$X^2 = 39.743$, $P = < .0000$

12. Does your department provide you with a graduate assistant?

	Yes	No
L	5 (25%)	15 (75%)
I	14 (70%)	6 (30%)
H	4 (57%)	3 (43%)

$X^2 = 8.325$, $P = < .0156$

25. How do you view research activities?

	Of Little Importance	Important	Very Important
L	3 (15%)	9 (45%)	8 (40%)
I	0 (0%)	3 (15%)	17 (85%)
H	0 (0%)	0 (0%)	7 (100%)

$X^2 = 13.880$, $P = < .0082$

Table 1. L = low, I = intermediate, and H = high. Items 5, 12, and 25 are frequencies and item 10. is in percent.